

10/525478

PATENT COOPERATION TREATY

Rec'd PCT/PTO 24 FEB 2005

From the INTERNATIONAL SEARCHING AUTHORITY

To:
DARA L. DINNER
UW2220
709 SWEDELAND ROAD
KING OF PRUSSIA, PA 10406

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT
OR THE DECLARATION

(PCT Rule 44.1)

Date of Mailing (day/month/year)		03 AUG 2004
Applicant's or agent's file reference P51281		FOR FURTHER ACTION See paragraphs 1 and 4 below
International application No. PCT/US03/26508	International filing date (day/month/year) 26 August 2003 (26.08.2003)	
Applicant SMITHKLINE BEECHAM CORPORATION		

1. ☒ The applicant is hereby notified that the international search report has been established and is transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

Where? Directly to the International Bureau of WIPO, 34, chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: (41-22) 740.14.35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect is transmitted herewith.

3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. Reminders

Shortly after 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90 bis.1 and 90 bis.3, respectively, before the completion of the technical preparations for international publication.

Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
Facsimile No. (703) 872-9306

Authorized officer

Mark L. Berch

Telephone No. 571-272-1600

F. Roberto for

Form PCT/ISA/220 (April 2002)

(See notes on accompanying sheet)

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PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P51281	FOR FURTHER ACTION	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. PCT/US03/26508	International filing date (<i>day/month/year</i>) 26 August 2003 (26.08.2003)	(Earliest) Priority Date (<i>day/month/year</i>) 06 September 2002 (06.09.2002)
Applicant SMITHKLINE BEECHAM CORPORATION		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the Report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:



contained in the international application in written form.



filed together with the international application in computer readable form.



furnished subsequently to this Authority in written form.



furnished subsequently to this Authority in computer readable form.



the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.



the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☒ Certain claims were found unsearchable (See Box I).

3. ☒ Unity of invention is lacking (See Box II).

4. With regard to the title,



the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

Please See Continuation Sheet

5. With regard to the abstract,



the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No. 1



as suggested by the applicant.



because the applicant failed to suggest a figure.



because this figure better characterizes the invention.



None of the figures

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/US03/26508

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claim Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☒ Claim Nos.: 26
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
Please See Continuation Sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
 2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
 3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
 4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-9 (part), 10, 11-25 (part)
- Remark on Protest ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/26508

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61K 31/52; 31/522; CO7D 473/16, 473/18, 473/24, 473/34

US CL : 544/276, 277; 514/263.37, 263.38, 263.4

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 544/276, 277; 514/263.37, 263.38, 263.4

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
CAS Online**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2002/0058667 A1 (CASTELHANO et al) 16 May 2002 (16.05.2002). See species at paragraphs 0239-0245, 253-256, compound 800 on page 52, 803-807 on page 53, 900-903 on page 54 (especially 902).	14-18, 20, 23-25 ----- 1-13, 19
Y	HESS et al. "7-Deazaadenines Bearing Polar Substituents: Structure-Activity Relationships of New A1 and A3 Adenosine Receptor Antagonists". J. Med. Chem. 2000 Vol. 43, No. 24, pp 4636-4646. See pages 31, 41-45, 9-17, 29, 30.	14-18, 20, 23-25
Y, P	US 6,680,324 B2 (CASTELHANO et al) 20 January 2004 (20.01.2004). See column 19, compound 803.	14-18, 20, 23-25
Y	WEST et al. "2-Alkyl(aryl)- and 2, 7-Dimethyl-4-substituted Aminopyrrolo[2, 3-d] pyrimidines". J. Organic Chemistry. 1961, Vol. 26, pages 3809-12. See last compounds in Tables 3 and 4.	14, 23-25
X	US 3,037,980 (HITCHINGS et al) 5 June 1962 (05.06.1962). See column 5, compound 43.	14, 20-25 ----- 18, 19

Y		



Further documents are listed in the continuation of Box C.



See patent family annex.

Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

18 May 2004 (18.05.2004)

Date of mailing of the international search report

03 AUG 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (703) 872-9306

Authorized officer

Mark L. Berch *J. Roberts for*

Telephone No. 571-272-1600

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Continuation of Item 4 of the first sheet:

Title Nonspecific New Title:

Pyrrolo [2, 3-d] pyrimidine-4-yl and purin-6-yl Urea compounds

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKINGGroup I, claim(s) 1-9 (part), 10, 11-25 (part), drawn to $Y=C$.Group II, claim(s) 1-9 (part), 11-25 (part), drawn to $Y=N$.

The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical feature is the heterocyclic core. Group I is drawn to pyrrolopyrimidines; Group II is drawn to purines. It is the core which is responsible for the pharmaceutical activity. These are structurally dissimilar as the cores differ in the number of hetero atoms present.